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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/696,912	10/30/2003	Jun Lu	03-0686 1496.00321	8216
22501 7590 07/22/2008 CHRISTOPHER P MAIORANA, PC LSI Corporation 24840 HARPER SUITE 100 ST CLAIR SHORES, MI 48080				
EXAMINER				
WU, JIANYE				
ART UNIT		PAPER NUMBER		
2616				
MAIL DATE		DELIVERY MODE		
07/22/2008		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/696,912

**Applicant(s)**

LU ET AL.

**Examiner**

Jianye Wu

**Art Unit**

2616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 18 May 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SF/ICE)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Response to Amendment/Arguments*

1. Applicant's arguments filed on 5/19/2008 have been fully considered but they are not persuasive. The arguments are moot due to the fact that all independent claims are amended. New ground rejections are made to the amended claims.

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
  2. Ascertaining the differences between the prior art and the claims at issue.
  3. Resolving the level of ordinary skill in the pertinent art.
  4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
2. **Claims 1-17** are rejected under 35 U.S.C. 103(a) as being unpatentable over Lin (US, US 2003/0144828 A1, hereinafter Lin).

For **claim 1, 9, 10 and 16**, Lin discloses an apparatus and a method comprising:  
an input circuit (combination of 415 and 433 of FIG. 14) configured to generate a plurality of data paths (e.g., 444-447 of FIG. 14) in response to an input data signal (433

of FIG. 14) having a plurality of data items (data on input 433 of FIG. 14) sequentially presented in a first order (the data sequence order on input 433 of FIG. 14);

a storage circuit (REGR 425 or REGW 426 of FIG. 14) configured to store each of said data paths in a respective shift register chain/memory (claim 16) (Shift Register, FIG. 75(A) used in REGR 421, 425 and 429, and REGW 422, 426 and 430 and other elements of FIG. 14); and

an output circuit (417 of FIG. 14) configured to generate an output data signal (435, FIG. 14) in response to each of said shift register chains, wherein (i) said output data signal presents said data items in a second order items (the sequence data on output 435 of FIG. 14) different from said first order (data order in 433 of FIG. 14 may be different from that of 435 of FIG. 14).

Lin does not explicitly disclose (ii) a first group of said shift register chains is configured to have a first delay and a second group of said shift register chains is configured to have a second delay.

Lin teaches a Shift register chain (FIG. 75A) that can be used in output circuit elements such as 429 or 430 of FIG. 14, comprising delay components (2400-2402 of FIG. 75(A)) whose delay can be adjusted as shown in FIG. 78, or as disclosed in [00273] by "the delay along a set of critical signal paths". One skilled in the art would be motivated to configure the output circuit elements with different delay values to meet application requirements.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to configure two groups of shift register chains each with its own delay in order to meet desired requirements.

As to **claim 2 and 11**, Lin discloses claim 1 and 10, wherein said first order comprises a sequential presentation of said plurality of data items (the sequence data on 433 of FIG. 14).

As to **claim 3 and 12**, Lin discloses claim 1 and 10, wherein said second order comprises a sequential presentation of said plurality of data items (the sequence data on output 435 of FIG. 14).

As to **claim 4**, Lin discloses the apparatus according to claim 1, wherein said input circuit comprises a demultiplexer circuit (425-428, FIG. 14; the data from input 433 is demultiplexed into multiple paths 444-447, FIG. 14).

As to **claim 5**, Lin discloses the apparatus according to claim 1, wherein said output circuit comprises a multiplexer circuit (e.g., circuit 419 multiplexes data on paths 444-447 into output 434, FIG. 14).

As to **claim 6 and 13**, Lin discloses claim 1 and 10, wherein said input circuit is controlled by a finite state machine (FIG. 20 and a four finite state machine, [0037], line 1-3; notice that all circuits are controlled by the clock logic for which the FSM refers to).

As to **claim 7 and 14**, Lin discloses claim 6 and 13, wherein said output circuit is controlled by said finite state machine (FIG. 20 and a four finite state machine, [0037], line 1-3; notice that all circuits are controlled by the clock logic for which the FSM refers to).

As to **claim 8** and **15**, Lin discloses claim 1 and 10, wherein each of said data paths is configured to have a propagation delay (delay controls, [0249], line 4).

As to **claim 17**, Lin discloses claim 1, wherein said first delay is generated in response to a first particular number of shift registers (429 of FIG. 14 and [00273], "the delay along a set of critical signal paths") and second delay is generated in response to a second particular number of shift registers (430 of FIG. 14 and [00273], "the delay along a set of critical signal paths").

***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jianye Wu whose telephone number is (571)270-1665. The examiner can normally be reached on Monday to Thursday, 8am to 7pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema Rao can be reached on (571)272-3174. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status

Application/Control Number:  
10/696,912  
Art Unit: 2616

Page 7

information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jianye Wu/

Examiner, Art Unit 2616

/Seema S. Rao/  
Supervisory Patent Examiner, Art Unit 2616